

### 3 FUTURE CONDITIONS

An important component in the transportation study is to estimate future conditions and evaluate the impact of potential developments in the study area. In order to assess future traffic conditions, the Study Team gathered information on future developments such as development profiles and square footage by land use type. As described in an earlier section of this report, Friendship Heights community falls under the jurisdiction of two governments: the District of Columbia and Montgomery County, Maryland. While the study area only consisted of the DC section of the Friendship Heights community, given the importance of the developments planned just across Western Avenue in Montgomery County, these future development proposals were included in the future traffic impact analysis.

The main sources of development information for the study area were the District of Columbia Department of Transportation (DDOT), Office of Planning, and the Friendship Heights Sector Plan adopted by Montgomery County Department of Parks and Planning, in 1998. A total of six developments were considered for the study, three in each jurisdiction. The specifics of the updated information on proposed land uses were gathered through consultations with the different developers. Proposed developments are in various planning stages and data included in the study is based on information that was available to the Study Team as of July, 2003.

#### 3.1 TRAFFIC FORECAST

In order to estimate the future conditions of the study area, it is important to understand the background or natural traffic growth as well as the proposed development potential of the study area. The future traffic impacts of background traffic growth and proposed developments over a ten-year period (year 2013) were evaluated in the study area and compared with the existing condition analysis. Future traffic impacts were carefully considered in the development of improvements which will be discussed in Chapter 5.

##### 3.1.1 *Background Growth*

To estimate the growth of background traffic, the Study Team compared historical trends with traffic forecasts developed by DDOT and the Metropolitan Washington Council of Governments (MWCOG). The historical data showed significant fluctuations, with short periods of rapid growth tempered by longer trends of slow or even negative growth. The MWCOG model, Round 6.2, forecasts background traffic growth from 2000 to 2010 at approximately 0.7 percent per year for the northwest Washington area. In addition, similar studies, Palisades and Takoma Park, have estimated background growth at 0.5 percent and 1.0 percent, respectively. Therefore, the Study Team has adopted 0.7 percent per year as the background growth factor for the Friendship Heights study.

##### 3.1.2 *Proposed Developments*

The Study Team identified three proposed developments in the District of Columbia and three in Montgomery County, Maryland. These sites are currently at various phases in the development process. Exhibit 33 illustrates the locations with a brief description of the proposed projects. Additional details are provided below.

**Exhibit 33: Proposed Developments**

## **Developments in the District of Columbia**

### **WMATA Western Bus Garage**

This project will include the same bus depot operation, one level below grade, covering the entire site area. As currently proposed, the ground floor will include retail space with frontage on Wisconsin Avenue and Jenifer Street, apartment tower entrances, lobbies and loading facilities, and an entrance to the Friendship Heights Metro station. Floors two through ten will include apartment space, a clubhouse, courtyards and other amenities.

Current zoning on the site is split between C-2B and R-5B; however, the developer will seek to obtain zoning relief through the Planned Unit Development (PUD) process to obtain the following project size (Exhibit 34):

**Exhibit 34: WMATA Western Bus Garage Proposed Development**

<b>Land Area</b>	3.77 acres
<b>Total Gross Floor Area (GFA)</b>	
<b>Residential</b>	700-800 units
<b>Retail</b>	90,000 sq.ft.
<b>Office</b>	--
<b>Parking</b>	1,000 cars (above grade)
<b>Others</b>	170,000 sq.ft. (bus depot below grade)

### **Buick Dealership**

The proposed project, currently a Buick dealership, is a development of high-end condominium units in a seven story building with approximately ten units per floor. The total number of units would be between 50 to 120 units. Tentatively, there would be one floor of retail with approximately 20,000 sq. ft. The project is still in a conceptual stage and will require a zoning change from the current commercial use.

The preliminary concept encompasses the proposals shown in Exhibit 35. The entrance to the development would be from the alley behind the development leading to Harrison Street. There would be at least two levels of underground parking with approximately 68 parking spaces per floor for its residents.

**Exhibit 35: Buick Dealership Proposed Development**

<b>Land Area</b>	N.A.
<b>Total Gross Floor Area</b>	
<b>Residential – Condominium</b>	50 to 120 Units
<b>Retail</b>	Approximately 20,000 sq. ft.
<b>2 level underground parking</b>	Approximately 136 spaces for residents

### **Washington Clinic** (Closed in March, 2003)

The proposed Planned Unit Development (PUD) involves the construction of a new residential condominium building and the expansion of a nearby day care center. The application requests zoning change from R-5-B to the R-5-C District for one of the lots considered for the development. This PUD was approved in early 2003 and development detail is shown in Exhibit 36.

**Exhibit 36: Washington Clinic Proposed Development**

<b>Land Area</b>	58,840 sq. ft.
<b>Total Gross Floor Area</b>	
<b>Residential – Condominium</b>	125 Units
<b>Day Care Center</b>	3,000 sq. ft.
<b>Parking spaces per unit</b>	1.1 per unit (8 for visitors)
<b>Parking for Day Care Center</b>	4 spaces

The development would consist of a 7-story building and a separate building for the Day Care Center. The proposed parking would consist of one hundred forty-one (141) spaces. One hundred thirty-three (133) of these spaces would be located in an underground garage, and the remaining eight spaces would be provided at grade, adjacent to the day care center.

**Developments in Montgomery County**

Chevy Chase Center/Chevy Chase Center Land Company

Among the different improvements considered for this project, the final design of the project focused on a mixed use potential due to its proximity to the Metro station. The project consists of a five story building for offices and retail space, an expansion of the existing grocery store to at least 20,000 sq. ft., and the addition of retail and office space along Wisconsin Avenue. Construction is slated to begin in early 2004.

Hecht's Site -- Wisconsin Place/Friendship Place

The proposal to develop the parcel of land where Hecht's is currently located includes the construction of two towers of ten levels of office space with ground level retail space. The composition of the development plan has changed since the original proposal in 1998. The new Hecht's store will occupy three levels; the plan includes a building with eleven floors of housing (433 dwelling units) and a public park on the site.

GEICO Site -- Friendship Commons

Preliminary planning approval was obtained in February 1999. The proposed development encompasses 810,000 square feet of office space (GEICO Headquarter), a maximum of 300 multi-family residential units and 200 townhouses. These will replace an existing 514,257 square feet of office (GEICO) building.

Exhibit 37 summarizes proposed developments in Montgomery County.

**Exhibit 37: Proposed and Recently Completed Developments (Information Based on As of February 2003)**

Proposed and Recently Completed Developments	Area	Gross Floor Area (GFA)			Total GFA
		Office	Retail	Housing	
Chevy Chase Center/C.C. Land Co.	3.44/4.78	203,800/112,000	96,200	NA	412,000
Wisconsin/Friendship Place – Hecht's	8.93	305,000	300,000	450,000 (433 dwelling units)	1,050,000
Friendship Commons - GEICO	9.91/16.6	810,000	NA	(500 dwelling units)	810,000

### 3.1.3 Scenario Development

Forecast years of 2008 and 2013 were used in this study to evaluate the short-term (5-year) and medium-term (10-year) traffic impacts of proposed developments in the study area. For the future years, two different scenarios were used: “Build” and “No-Build”. The “No-Build” scenario assumes no additional developments in the Friendship Heights area. The “Build” scenario assumes that all the proposed new developments discussed in Section 3.1.2 will be in place in future years. Thus, four different scenarios were developed and compared with the existing condition analysis discussed in Section 2.7:

- Base Year 2003 - Existing Conditions,
- Future Year 2008 - No Build,
- Future Year 2008 - Build,
- Future Year 2013 - No Build,
- Future Year 2013 - Build.

## 3.2 DEVELOPMENT TRAFFIC

The methodology recommended by the Institute of Transportation Engineers (ITE) was followed to estimate the trips generated by the proposed developments. The methodology begins with a base trip generation rate for a particular type of facility (e.g., mid-rise apartment complex or cinema), expressed in terms of an independent variable (e.g., number of dwelling units, gross floor area, or number of theater seats). The base rates are for the most part typical of suburban development, as evidenced by the source studies for the data. Therefore, base trip generation rates are typically adjusted upward or downward, based on specific local characteristics (e.g., a rural, town, small urban, or large urban setting, and absence or presence and intensity of transit.).

Consistent with this approach, base trip generation rates for the new proposed land uses were obtained from the ITE Trip Generation Manual (6<sup>th</sup> Edition, 1997). These base trip generation rates were then multiplied by the appropriate independent variable. This base trip number for each type of facility was then reduced by a specific percentage, depending on whether the facility was commercial or residential. The rationale and sources for the assumptions used follow.

**Pass-by Trips- Commercial:** 10%. Trip generation rates are obtained from observations and studies of facilities, with most observations occurring in suburban, dispersed settings. Some types of facilities invite opportunistic trips and “spur of the moment” decisions (e.g., diverting to the doughnut or coffee shop, or stopping by the department store on the way home). These types of trips do not add to the volume of traffic on the roadway, as the basic origin-destination trip already exists. This type of pass-by activity is enhanced in compact urban settings such as Friendship Heights, where several errands can easily be combined into a single stop due to the proximity of the service stores and the walkability of the community. This reduces the number of vehicle trips. ITE supports 10% as a conservative estimate for pass-by trips in general; some studies increase this factor to 20% to 30% for desirable, small-scale retail establishments.

**Walking Trips- Related to mixed use development:** 10%. Planned-unit and mixed-use developments typically combine retail uses on lower levels with residential or office uses on upper levels. This increases the “livability” of an area, with round-the-clock activity. It also reduces vehicle trips for residents or employees in the facility, as many trip purposes (e.g., errands, shopping, recreation, medical or dental visits, etc.) can be accommodated in one’s own building, or close enough to walk rather than drive.

**Transit Trips- Related to Metro Rail service:** 30% commercial, 40% residential. The most significant local factor affecting trip generation is the presence of high-quality transit service in the area. Virtually the entire study area, including the new developments proposed for the area, are within an easy five-minute walk to a Metrorail station. With extended service hours, high frequency of service, and high marks for safety and reliability, Metrorail clearly is an attractor. Further, persons who will pay a premium to live or establish an office or other facility near a Metro will have a higher propensity than normal to use Metro for everyday business and travel. A major research study that included data from the Washington region noted that proximity to stations has a major impact on modal split. “If the worker was coming from Washington, D.C., the transit modal share was 52 percent...The study also found a number of housing projects near suburban Metrorail stations where the transit modal splits exceeded 50 percent...for work trips.”<sup>1</sup> Studies in other areas also support the finding that transit availability significantly reduces vehicle trips. The assumptions used for this study may therefore be deemed conservative: rather than a 50 percent reduction in vehicle trips associated with 50 percent transit use, we have assumed a 30 percent reduction in trips associated with transit availability for commercial facilities, and a 40 percent reduction for trips associated with housing or residential facilities.

The specific reduction assumptions are summarized in Exhibit 38.

**Exhibit 38: Summary Assumptions**

Categories	Assumption
<b>Trip Reductions</b>	
<i>Transit – Housing Trips</i>	40 %
<i>Transit – Commercial Trips</i>	30 %
<i>Walking Trips</i>	10 %
<i>Pass-by Trips - Commercial</i>	10 %
<b>Trip Distribution</b>	
<i>As trips enter/leave developments</i>	Varies
<i>Once on the street network</i>	According to trip counts

After the total number of trips generated by the proposed developments is obtained (by multiplying the trips generated by the trip reduction percentages), the trips are distributed on the street network. In order to perform this distribution, assumptions are made as to the trip patterns followed by the residents, clients and workers as they leave or enter the proposed developments.

<sup>1</sup> Transit Cooperative Research Program, Research Results Digest, June 1995, Number 7, “An Evaluation of the Relationships Between Transit and Urban Form”.

Once on the street network, it is assumed that they follow the trip patterns reflected by the traffic counts gathered at selected intersections in the study area.

The trips generated by the existing developments on the properties were also estimated and then subtracted from the trips generated by the new developments. Exhibit 39 summarizes the estimated additional trips generated by each development in and near the study area (including Montgomery County). Exhibits 40 and 41 also show peak hour traffic volumes of the 12 intersections where detailed analyses were conducted, with the proposed developments described above.

**Exhibit 39: Summary of Additional Trips Generated by Development**

Development	AM Peak Hour			PM Peak Hour		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Washington Clinic	18	36	54	32	24	56
Buick Site	-5	19	14	18	8	26
WMATA Garage	52	186	238	216	149	365
Chevy Chase Center	202	34	236	62	206	268
Hecht's	273	95	368	197	339	536
GEICO	225	156	381	167	234	401
TOTAL	765	526	1,291	692	960	1,652

**Exhibit 40: Projected 2008 Peak Hour Traffic Volumes with Proposed Developments**



**Exhibit 41: Projected 2013 Peak Hour Traffic Volumes with Proposed Developments**

### 3.3 FUTURE LEVELS OF SERVICE

Future traffic conditions were analyzed using the same methodology utilized to analyze the level of service under existing conditions. Exhibits 42 and 43 show the results from the future traffic analysis, prior to evaluating the impact of proposed improvements. As expected, the levels of service worsen over time since the traffic volumes increase, which reflects the do-nothing situation (“No-Build”). In addition, trips generated by proposed developments will deteriorate the levels of service at certain intersections faster than the “No-Build” scenario (“No-Build”). Later in the report, these levels of service will be compared with the future conditions with the implementation of the proposed improvements to be discussed in Section 6.

**Exhibit 42: Future Levels of Service in AM Peak Hours – Build and No-Build Scenarios**

Node #	Intersections	Existing LOS	Forecast Year 2008		Forecast Year 2013	
			No Build Scenario	Build Scenario	No Build Scenario	Build Scenario
1	Western Ave. @ 41 <sup>st</sup> St. NW	C	C	C	E	E
2	Western Ave. @ Military Rd. N.W.	B	B	C	B	C
3	Wisconsin Ave. @ Western Ave. N.W.	C	C	D	D	D
4	Western Ave. @ 44 <sup>th</sup> St. N.W.	B	B	B	B	B
5	Western Ave. @ Jenifer St. N.W.	B	B	B	B	C
6	Wisconsin Ave. @ Jenifer St. N.W.	C	C	D	C	D
7	Wisconsin Ave. @ Harrison St. N.W.	A	A	A	A	A
8	Wisconsin Ave. @ Garrison St. N.W.	F*	F*	F*	F*	F*
9	Wisconsin Ave. @ Fessenden St. N.W.	B	B	C	D	D
10	Military Rd. @ 43 <sup>rd</sup> St. N.W.	C*	C*	C*	D*	D*
11	Military Rd. @ 41 <sup>st</sup> St. N.W.	B	C	C	C	D
12	Military Rd. @ Reno Rd. N.W.	B	B	C	B	C

\* These are unsignalized intersections. Levels of service at these intersections were measured based on the Highway Capacity Manual Unsignalized Intersection Capacity Analysis. Delay is for minor street approach only.

**Exhibit 43: Future Traffic Situation in PM Peak Hour – Build and No-Build Scenarios**

Node #	Intersections	Existing LOS	Forecast Year 2008		Forecast Year 2013	
			No Build Scenario	Build Scenario	No Build Scenario	Build Scenario
1	Western Ave. @ 41 <sup>st</sup> St. NW	D	F	F	F	F
2	Western Ave. @ Military Rd. N.W.	B	B	C	B	C
3	Wisconsin Ave. @ Western Ave. N.W.	D	D	D	D	E
4	Western Ave. @ 44 <sup>th</sup> St. N.W.	B	B	B	B	B
5	Western Ave. @ Jenifer St. N.W.	B	C	D	C	D
6	Wisconsin Ave. @ Jenifer St. N.W.	C	C	D	C	E
7	Wisconsin Ave. @ Harrison St. N.W.	A	A	B	B	B
8	Wisconsin Ave. @ Garrison St. N.W.	E*	E*	E*	E*	E*
9	Wisconsin Ave. @ Fessenden St. N.W.	C	B	B	B	C
10	Military Rd. @ 43 <sup>rd</sup> St. N.W.	C*	C*	C*	D*	D*
11	Military Rd. @ 41 <sup>st</sup> St. N.W.	F	E	F	F	F
12	Military Rd. @ Reno Rd. N.W.	E	E	F	E	F
* These are unsignalized intersections. Levels of service at these intersections were measured based on the Highway Capacity Manual Unsignalized Intersection Capacity Analysis. Delay is minor street approach only.						